DOCUMENT RESUME

ED 154 548 EC 110 250

TITLE	Adapted Equipment for Physical Activities.
INSTITUTION	American Alliance for Health, Physical Education, and Recreation, Washington, D.C.
PUB DATE	Oct 77
NOTE	7p.
AVAILABLE FROM	American Alliance for Health, Physical Education and Recreation, 1201 16th Street, N.W., Washington, D.C. 20036 ($2.00)
JOURNAL CIT	Practical Pointers; v1 n5 p1-6 Oct 1977
EDRS PRICE	MF-$0.83 Plus Postage. HC Not Available from EDRS.
DESCRIPTORS	*Adapted Physical Education; *Handicapped Children; *Physical Activities; *Physical Education

ABSTRACT

Listed and described are 29 pieces of equipment or devices used by handicapped individuals to permit full participation in various physical activities. Equipment includes aquatic devices, bicycling equipment, devices for ball activities, bowling aids, and assistive devices for young children. (JYC)

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1201 16th Street, N.W., Washington, D.C. 20036

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Volume 1, Number 5
October 1977

ADAPTED EQUIPMENT FOR PHYSICAL ACTIVITIES

Adapted equipment and devices are used by many handicapped individuals to permit their full participation in various physical activities. Not all handicapped participants need or want these devices. However, physical educators and recreators should be aware of them so that no participant is barred from an activity due to lack of knowledge about a particular device that could have facilitated participation.

AQUATIC DEVICES

Tot Dock - (Stadiums Unlimited, Box 374, Grinnell, Iowa 50112) is an underwater portable swimming pool platform that rests on the bottom of the pool at heights of six to twelve inches, providing a solid base for swimming instruction. This is particularly useful for pools that have inadequate shallow ends. Cost: $140.00 per platform. Homemade alternative: Although they are not as stable, plastic tumbling mats have been used for individuals to stand or lie on during swimming instruction.

Schwimmflugel - (Belleair International, 1016 Ponce de Leon Boulevard, Belleair, Florida 33516) are inflatable cuffs worn around each arm above the elbow to keep the nonswimmer afloat. Cost: $4.75. Homemade alternative: Empty plastic bottles (capped) tied around arms with old nylon stockings or pieces of fabric are more cumbersome but less expensive alternatives to help beginners stay afloat.

Speedo Aqualift Swimsuit - (Blue Grass Industries, Carlisle, Kentucky 40311) a one-piece nylon tricot swimsuit, is constructed with an inflatable air bladder inside the front of the suit. When inflated, it will support up to a 200 pound adult, and may be gradually deflated as the swimmer becomes more skilled and used to the water. Cost: $12.50 (all sizes). Homemade alternative: None known.

Aqua Bat - (Gander Mountain, Inc., P.O. Box 248, Wilmot, Wisconsin 53192). Tubing and a seat are affixed to these waterskiis, making them usable by paraplegics, incomplete quadriplegics, amputees, and cerebral palsied persons. The tow rope may be held or tied to the tubing. The user steers the skiis by leaning to either side. Cost: $104.50. Homemade alternative: None known.

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Bath Trolly - (Ortopedia GmbH, D2300 Kiel 14, P.O. Box 6409, Germany) is a plastic seat on four casters, resembling a gym scooter. The seat has a slightly curved backrest for stability and comfort and has slots cut into it to allow drainage of water. The trolly was designed to help leg amputees move from changing areas to pool or lakeside by propelling themselves with their arms. Cost: $61.00. Homemade alternative: A gym scooter could be adapted by adding high quality casters and a backrest (optional). To construct a gym scooter, round off the corners and sand well a piece of 12" x 12" x 3/4 inch plywood. Mount four casters with rubber wheels on the corners using wood screws. Paint the scooter with Marine paint or the less expensive Marine Spar varnish (2 coats). A gym scooter could alternately be constructed of one of the many plastic materials now on the market.

BICYCLING EQUIPMENT

Schwinn Tandem Bicycles - (local distributors only; consult Yellow Pages of the telephone directory) are bicycles built for two riders that permit visually handicapped individuals to ride safely with non-impaired partners. Cost $160.00 and up.

Spina Bifida Range Tricyles - (George Fitt Engineering, Tankerton Road, Whitstable, Kent, England) are three-wheelers specifically designed so that persons of all ages who have no use of their legs can use hand propulsion to move the tricycle. Fixed gear drive from the rear axel results in bicycle pedals moving, thus exercising the rider's legs as well. Cost: $150 - 200.00.

Tricycle Body Support - (J.A. Preston Corporation, 71 Fifth Avenue, New York, New York 10003) attaches to any tricycle frame, enabling children with poor balance to enjoy tricycle activities. The support adjusts for height and girth. Cost: $15.25. Homemade alternative: An aluminum frame and canvas backing, similar to a wheelchair back, could be welded or bolted to a tricycle.

Special Pedals - (J.A. Preston Corporation, 71 Fifth Avenue, New York, N.Y. 10003). These wood devices with leather heel supports and straps attach to the pedals of bicycles or tricycles to keep the user's feet from slipping off. Cost: $16.40 (7-, 8-, 9-inch sizes). Homemade alternative: Could be constructed by attaching a 3/4 inch wide leather strap around one end of a seven to nine inch piece of wood, and securing another piece of leather at the heel for support; securely attach this to each bicycle pedal.

Buddy Bar - (Funway, 13930 Stansbury, Detroit, Michigan 48227) is an attachment that joins two regular bicycles side-by-side approximately one yard apart, permitting visually handicapped, mentally retarded, or physically impaired persons to ride beside non-handicapped partners. Cost: $40.00. Homemade alternative: Join a piece of metal tubing securely to the frame of each bicycle below the handlebars.

DEVICES FOR BALL ACTIVITIES

Adjustable Batting Tee - (Flaghouse, Inc., 18 West 18th Street, New York, N.Y. 10011) can be raised to any height from 27 inches to 43 inches accommodating batters with a wide range of ages and heights. This enables individuals with poor coordination or visual impairments to practice batting skills and participate in

softball or baseball games. Price includes telescoping tee, base, and plastic ball. Cost: $4.50. Homemade alternative: Cut out the top end of a wiffle-ball bat and slip the bat through the end of a traffic cone. Or, cut a piece of 3/4 inch plywood into a two x two foot square; anchor a two to three foot tall pole or dowel (1 1/2 to 2 inches diameter) into the base with nails or screws. Attach a piece of hose with an adjustable clamp to the pole, which can then be raised or lowered according to height of children participating.

The No Miss Mitt - (Libra International Distributors, 473 North Church Street, Moorestown, New Jersey 08057) is a baseball glove constructed of special pile materials so that a velcro-covered plastic ball will adhere to it. This ensures a successful experience for children who may never have caught a ball. Cost: $5.00 (ball and glove). Homemade alternative: Make a mitt or mitten from an old towel and sew velcro strips to it; cover an old plastic ball with velcro strips. Or, make a ball by stuffing nylon stocking into an old sock, tucking loose ends of the sock inside and sewing shut; attach velcro strips to this.

Audible Football, Softball, Soccerball - (Sensory Aids, 175 Terminal Drive, Plainville, New York 11803) are regulation balls with battery powered sound sources inside that assist visually impaired persons in locating them by sound alone. Cost: $50.00. Homemade alternative: No effective and safe alternative known.

Cube Ball - (Elementary Gym Closet, Inc., 2511 Leach Road, Pontiac, Michigan 48057) is an eight-inch polyhedron made of polyurethane particularly suited for indoor ball games that involve kicking. The ball's shape permits it to roll accurately when kicked, but it does not roll too far or too fast from players with locomotor difficulties. Cost: $5.00. Homemade alternative: A large sponge or piece of foam can be cut into a polyhedron shape with scissors or, more easily, with an electric knife. When using an electric knife, hold the piece of sponge or foam in a vise, between two stacks of books, or between two cinderblocks.

Left-Handed Catcher's Mitt - (The Left Hand, Inc., 140 West 22nd Street, New York, N.Y. 10011) is a regulation Spaulding glove designed for people who catch with their left hand (amputees, physically handicapped, or left-handed). Cost: $21.95. Homemade alternative: None known.

BOWLING AIDS

Bowling Booster - (Russell Bechtel, 6943 Bittersweet, Pensacola, Florida 32506) is a fiberglass portable ramp for use by persons who cannot move their arms to propel a bowling ball in the conventional manner. Ball can be propelled down the ramp using the feet, hands, arms, or other body part. Cost: $47.50. Homemade alternative: A wooden ramp with sides could be constructed, but it would not be this portable, lightweight, and friction-less.

Bowling Ball Pusher - (North American Recreation, P.O. Box 758, 33 Knowlton Street, Bridgewater, Connecticut 06601), a long-handled rake-like device, is an aid for persons who cannot bend and throw a bowling ball but are too mobile to require a bowling ramp. Cost: $39.95. Homemade alternative: A pushbroom could be used; or, cover the end of an old bristle-less pushbroom with foam and felt (so that the bowling lane is not damaged). A device similar to a shuffleboard pusher but with a larger head would be ideal.

Handle Grip Bowling Ball - (North American Recreation, P.O. Box 758, 33 Knowlton Street, Bridgewater, Connecticut 06601) is a regulation bowling ball with a handle that automatically retracts flush into the ball when released; individual finger strength and dexterity are not required to use this ball. Cost $52.50. Homemade alternative: None known.

Bowling Ball Holder Ring - (George H. Snyder, 5809 N.E. 21 Avenue, Fort Lauderdale, Florida 33308) attaches to the arm of a wheelchair and holds a bowling ball securely in the bowler's lap while he/she wheels up to the foul line. Cost: $9.99. Homemade alternative: Any piece of metal (heavier than a coathanger, though) bent in a circle and clamped to the wheelchair arm will do.

Mahler Standard Bowling Rail - (American Foundation for the Blind, 15 West 16th Street, New York, N.Y. 10011) guides visually impaired bowlers in a straight path to the foul line and meets standards of the American Blind Bowling Association. Cost: $28.95. Homemade alternative: Use the end lane and let participants use the wall as a guide. In center lanes, blind bowlers can use the ball return as a guide.

ASSISTIVE DEVICES FOR YOUNG CHILDREN

Audible Nerf Ball - (Science for the Blind Products, 221 Rock Hill Road, Bala Cynwyd, Pennsylvania 19004) is a soft, spongy play ball that beeps continuously when turned on; especially suited for small visually impaired children. Cost: $37.50. Homemade alternative: Nerf balls can be cut from sponges or foam, but it is doubtful whether a bell or baby's rattle could be safety or effectively inserted into the ball.

New Elevated Sandbox -(Game Time, 6874 Washington Avenue So., Eden Prairie, Minn. 55343) can be used for either sand or water play and is elevated to accommodate children in wheelchairs. Cost: $169.00. Homemade alternative: Make a table, approximately 30 inches in height, with part of the table top cut away so that a metal laundry tub or child's plastic sandbox can be secured in the center.

The Mobile Mat - (Jayfro Corporation, P.O. Box 400, Waterford, Connecticut 06385) is a 16- x 43 inch padded platform with velcro safety straps and four heavy duty roller bearing casters. It enables nonambulatory children to participate in locomotor activities and encourages development of crawling. Cost: $89.00. Homemade alternative: Make a large scooter board out of plywood (see "Bath Trolly" for instructions), or secure two small scooter boards together; cover with foam padding and a fabric cover. Sew velcro straps to the fabric covering.

Floor Sitter - (North American Recreation, P.O. Box 758, 33 Knowlton Street, Bridgewater, Connecticut 06601) resembles a chair without legs that permits small children to maintain a sitting position during floor play. Cost: $54.00. Homemade alternative: Remove the legs from an old chair; pad the chair if necessary and attach a belt to the chair, which will prevent the child from slumping onto the floor.

Layered Ball - (Flaghouse Inc., 18 West 18th Street, New York, N.Y. 10011) is a soft, spongy, multicolored ball that is easy for a small or motorically impaired child to grip because the foam material is layered. Cost: $2.10. Homemade alternative: Yarn balls, which are fluffy and easy to grasp, are an inexpensive alternative to purchasing balls. Make two cardboard doughnuts by cutting two-inch centers out of two four-inch circles of cardboard. Hold the two doughnuts together and wrap yarn around them until the centers are almost full. With a knife, cut the yarn around the

outside edge of the doughnut. Slide the two cardboard circles apart and tie the yarn tightly in the center with string or another piece of yarn. Cut away the doughnuts and fluff up the yarn ball until it is round.

OTHER ADAPTED EQUIPMENT IDEAS

The Skate Aid - (Hein-A-Ken, P.O. Box 56, Thief River Falls, Minnesota 56701) is a pyramidal device similar to a walker with runners, giving support to novice ice skaters. Cost: $59.95. Homemade alternative: Some ice skating programs use chairs, but these are not as safe and stable as the above device.

Flipski - (Pauls Sports Inc., Route 1, Box 615P, Excelsior, Minnesota 55331) is an outrigger ski for amputees, the tip of which flips up into the vertical position when the skier needs to use it as a crutch for walking. Outrigger skiis resemble ski poles with little skiis on the end and are used instead of ski poles by amputee and other physically handicapped skiers to assist in balancing. Cost: $118.00. Homemade alternative: None known.

Hot Shot Automatic Billiard Cue - (A to Z Industries, 118112-5 Bryand Street, Northridge, California 91324) is a billiard cue that is spring-loaded by pressing the tip against any available surface. Persons with amputations, cerebral palsy, muscular dystrophy, or high-level spinal cord injuries need only lightly press the trigger to fire the cue. Cost: $34.95. Homemade alternative: None known.

Rug Croquet - (Creative Playthings, Princeton, New Jersey 08540) is identical to a regular croquet game, except the wickets stand on little feet. This game is ideal for bringing a physical activity to youngsters who cannot go outside. Cost: $5.50. Homemade alternative: Make stands for regular croquet wickets by drilling a small hole in blocks of wood and inserting the ends of wickets into the holes.

ADDITIONAL RESOURCES FOR HOMEMADE EQUIPMENT AND ADAPTED DEVICES

Corbin, Charles B. Inexpensive Equipment for Games, Play, and Physical Activity. Dubuque, Iowa: Wm. C. Brown Company, 1972.

Cowart, James F. Instructional Aids for Adaptive Physical Education. Hayward, California: Alameda County Schools (224 West Winton Avenue, 94544), 1977.

Gallahue, David L. Developmental Play Equipment for Home and School. New York, N.Y.: John Wiley and Sons, Inc., 1975.

Physical Education and Recreation for the Handicapped: Information and Research Utilization Center (IRUC). Homemade Innovative Play Equipment for Activities in Physical Education and Recreation for Impaired, Disabled, and Handicapped Participants. Washington, D.C.: AAHPER/IRUC (1201 16th St. N.W., 20036), 1973, 92 pp. $9.20.

Werner, Peter H., and Richard A. Simmons. Inexpensive Physical Education Equipment for Children. Minneapolis, Minnesota: Burgess Publishing Company (7108 Ohms Lane, 55435), 1976.